Access DB# 207582

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 11-15-06
Art Unit: 1752 Phone Number 30 2-1333 Serial Number: 10/679,782
Mail Box and Bldg/Room Location: 9C15 (Rem.) Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: PTZ. See B:6

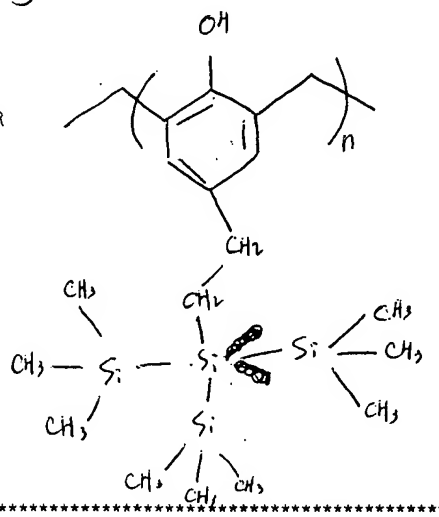
Inventors (please provide full names):

Earliest Priority Filing Date:

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

(We searched both the product and the method of making it that was described.)

Please search for a polymer having the following repeating unit



(method for making such polymer is shown on pg. 16 of spec. (attached here)

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable
Searcher: EJ	NA Sequence (#)		STN
Searcher Phone #:	AA Sequence (#)		Dialog
Searcher Location:	Structure (#)		Questel/Orbit
Date Searcher Picked Up:	Bibliographic		Dr.Link
Date Completed: 11-22-06	Litigation		Lexis/Nexis
Searcher Prep & Review Time:	Fulltext		Sequence Systems
Clerical Prep Time:	Patent Family		WWW/Internet
Online Time:	Other		Other (specify)

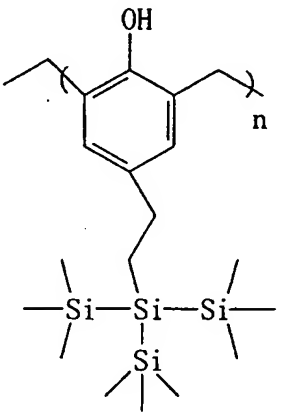
PTO-1590 (8-01)

regions in the imaging layer, selectively removing portions of the imaging layer, the antireflective/hardmask layer and the organic underlayer to expose portions of the material layer, and etching, electroplating, metal depositing or ion implanting the exposed portions of the material layer, thereby forming the patterned material feature.

An embodiment of the invention also encompasses methods of making lithographic structures. The embodiment also includes a deposition process wherein various layers are formed atop each other.

Another embodiment of the present invention relates to a method of making of a novolac polymer combining a silane-substituted phenol with formalin. In this embodiment, p-,o- or m- ~~acetoxystyrene styrene~~ is hydrosilated with tris(trimethylsilyl)silane, methylbis(trimethylsilyl)silane or pentamethyldisilane, then the hydrosilated product is hydrolyzed with NH_4OH to form a silane substituted phenol. The silane phenol is then condensed with formaldehyde to form a novolacsilane. One example of the novolacsilane structure is shown below:

acetoxystyrene



One embodiment of the invention involves the use of the ARC/hardmask compositions for lithographic processes using mid-UV, 190-300 nm deep UV, 125-160 nm vacuum UV, EUV, X-ray, or e-beam or other imaging radiation.

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Bib Data Sheet

CONFIRMATION NO. 3728

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/679,782	10/06/2003 RULE	430	1752	FIS920030196US1

APPLICANTS

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Dirk Pfeiffer, Dobbs Ferry, NY;
Ratnam Scooriyakumaren, San Jose, CA;

** CONTINUING DATA **********
None SJL

** FOREIGN APPLICATIONS **********
None SJL

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 12/29/2003

Foreign Priority claimed	STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐ yes ☑ no	NY	1	29	1

35 USC 119 (a-d) conditions met: ☐ yes ☐ no ☐ Met after Allowance

Verified and Acknowledged: Examiner's Signature SJL Initials

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GARDEN CITY , NY
11530

TITLE
Silicon-containing compositions for spin-on arc/hardmask materials

FILING FEE	FEES: Authority has been given in Paper	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of

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=> FILE REG
FILE 'REGISTRY' ENTERED AT 11:49:38 ON 22 NOV 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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=> DISPLAY HISTORY FULL L1-

     FILE 'HCAPLUS' ENTERED AT 10:25:03 ON 22 NOV 2006
L1           494 SEA ANGELOPOULOS ?/AU
L2        141947 SEA HUANG ?/AU
L3             1 SEA MAHOROWILA ?/AU
L4          7406 SEA PFEIFFER ?/AU
L5             1 SEA SCOORIYAKUMAREN ?/AU
L6             1 SEA L1 AND L2 AND L3 AND L4 AND L5
                 SEL RN

     FILE 'REGISTRY' ENTERED AT 10:25:18 ON 22 NOV 2006
L7             5 SEA (1873-77-4/BI OR 2628-16-2/BI OR 849346-60-7/BI OR

     FILE 'LREGISTRY' ENTERED AT 10:32:25 ON 22 NOV 2006
L8               STR

     FILE 'REGISTRY' ENTERED AT 10:40:58 ON 22 NOV 2006
L9            50 SEA SSS SAM L8
L10         4032 SEA SSS FUL L8
                 SAV L10 LEE782/A
L11        26886 SEA 50-00-0/CRN
L12            3 SEA L10 AND L11

     FILE 'HCA' ENTERED AT 10:44:43 ON 22 NOV 2006
L13            2 SEA L12

     FILE 'REGISTRY' ENTERED AT 10:45:33 ON 22 NOV 2006
L14              STR L8
L15            7 SEA SUB=L10 SSS SAM L14
L16           74 SEA SUB=L10 SSS FUL L14
                 SAV L16 LEE782A/A
L17            1 SEA 50-00-0

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L18           57 SEA L16
L19       239263 SEA L17 OR FORMALDEHYDE# OR FORMALIN# OR PARALIN# OR
                 CH2O OR H2CO OR HCHO OR PARAFORMALDEHYDE#
L20            2 SEA L18 AND L19

     FILE 'REGISTRY' ENTERED AT 10:57:26 ON 22 NOV 2006
```

```
                E PHENOL, 4-ETHENYL-, ACETATE/CN
L21           1 SEA "PHENOL, 4-ETHENYL-, ACETATE"/CN
                E PHENOL, 3-ETHENYL-, ACETATE/CN
L22           1 SEA "PHENOL, 3-ETHENYL-, ACETATE"/CN
                E PHENOL, 2-ETHENYL-, ACETATE/CN
L23           1 SEA "PHENOL, 2-ETHENYL-, ACETATE"/CN
                E PHENOL, ETHENYL-, ACETATE/CN
L24           1 SEA "PHENOL, ETHENYL-, ACETATE"/CN
L25           4 SEA L21 OR L22 OR L23 OR L24
                E PHENOL, 4-ETHENYL-/CN
L26           1 SEA "PHENOL, 4-ETHENYL-"/CN
                E PHENOL, 3-ETHENYL-/CN
L27           1 SEA "PHENOL, 3-ETHENYL-"/CN
                E PHENOL, 2-ETHENYL-/CN
L28           1 SEA "PHENOL, 2-ETHENYL-"/CN
                E PHENOL, ETHENYL-/CN
L29           1 SEA "PHENOL, ETHENYL-"/CN
L30           4 SEA L26 OR L27 OR L28 OR L29

     FILE 'HCA' ENTERED AT 11:03:54 ON 22 NOV 2006
L31        1456 SEA L25 OR L30
L32        3325 SEA L10
L33           0 SEA L31 AND L32 AND L19

     FILE 'REGISTRY' ENTERED AT 11:04:48 ON 22 NOV 2006
L34        3477 SEA (C(L)H(L)SI)/ELS (L) 3/ELC.SUB AND 1<SI AND NO
                RSD/FA

     FILE 'HCA' ENTERED AT 11:05:51 ON 22 NOV 2006
L35        6431 SEA L34
L36           0 SEA L31 AND L35 AND L19

     FILE 'REGISTRY' ENTERED AT 11:08:15 ON 22 NOV 2006
                E PHENOLIC RESIN/PCT
L37       16741 SEA "PHENOLIC RESIN"/PCT
L38       12391 SEA L37 AND L11

     FILE 'HCA' ENTERED AT 11:10:09 ON 22 NOV 2006
L39       69387 SEA L38 OR NOV!LA? OR ?PHENOL?(2A)(FORMALDEHYDE# OR
                FORMALIN# OR PARALIN# OR CH2O OR H2CO OR HCHO OR
                PARAFORMALDEHYDE#)
L40          24 SEA L39 AND (L35 OR L32)

     FILE 'REGISTRY' ENTERED AT 11:12:01 ON 22 NOV 2006
                E AMMONIUM HYDROXIDE/CN
L41           1 SEA "AMMONIUM HYDROXIDE"/CN
                E AMMONIA/CN
L42           1 SEA AMMONIA/CN
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     FILE 'HCA' ENTERED AT 11:17:11 ON 22 NOV 2006
L43       443553 SEA L41 OR L42 OR NH4OH OR AMMONIUM#(A)HYDROXIDE# OR NH3
                 OR AMMONIA#
L44              QUE HYDROLY?
L45            0 SEA L40 AND L43
L46            3 SEA L40 AND L44
L47           11 SEA NOV!LA!SILANE# OR NOV!LA?(A)SILANE#
L48            0 SEA L40 AND L47
L49          963 SEA HYDROSILAT?
L50            0 SEA L40 AND L49
L51       509516 SEA ANTIREFLECT? OR REFLECT?
L52       110374 SEA HARDMASK? OR MASK? OR PHOTOMASK?
L53        95522 SEA RESIST OR RESISTS OR PHOTORESIST?
L54           23 SEA L40 AND (L51 OR L52 OR L53)
L55            3 SEA L40 AND L51
L56            5 SEA L40 AND L52
L57        30642 SEA PHOTOLITHO? OR PHOTO(2A)LITHO?
L58            5 SEA L40 AND L57
L59            1 SEA L40 AND CONDENS?
L60           11 SEA L13 OR L20 OR L46 OR L55 OR L56 OR L58 OR L59

     FILE 'REGISTRY' ENTERED AT 11:49:38 ON 22 NOV 2006


=> D L16 QUE STAT
L8                STR

     5
    Ak
     \
      2  3
Ak~Si~Si~G1           Ak @11
1   \   \   4
     \   \
    Ak   G1
     6   8


VAR G1=SI/11
NODE ATTRIBUTES:
CONNECT IS E1  RC AT   1
CONNECT IS E1  RC AT   5
CONNECT IS E1  RC AT   6
CONNECT IS E1  RC AT  11
DEFAULT MLEVEL IS ATOM
GGCAT   IS SAT  AT   1
GGCAT   IS SAT  AT   5
GGCAT   IS SAT  AT   6
GGCAT   IS SAT  AT  11
DEFAULT ECLEVEL IS LIMITED
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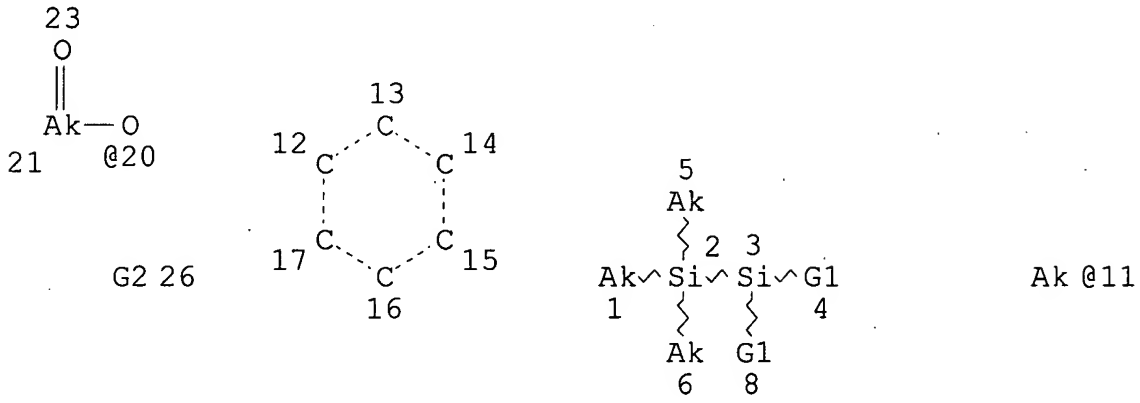
GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
L10 4032 SEA FILE=REGISTRY SSS FUL L8
L14 STR



VAR G1=SI/11
VAR G2=OH/20
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 1
CONNECT IS E1 RC AT 5
CONNECT IS E1 RC AT 6
CONNECT IS E1 RC AT 11
CONNECT IS E2 RC AT 21
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 1
GGCAT IS SAT AT 5
GGCAT IS SAT AT 6
GGCAT IS SAT AT 11
GGCAT IS SAT AT 21
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE
L16 74 SEA FILE=REGISTRY SUB=L10 SSS FUL L14

100.0% PROCESSED 522 ITERATIONS 74 ANSWERS
SEARCH TIME: 00.00.01

=> FILE HCA
FILE 'HCA' ENTERED AT 11:50:23 ON 22 NOV 2006

=> D L60 1-11 CBIB ABS HITSTR HITIND

L60 ANSWER 1 OF 11 HCA COPYRIGHT 2006 ACS on STN
143:219454 Chemically amplified photoresists with high sensitivity, resolution, and less scums, silsesquioxane compositions therefor, and method for forming precise patterns therewith. Hatakeyama, Jun (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005221714 A2 20050818, 102 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2004-28994 20040205.
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The compns. contain (A) organopolysiloxanes prepd. by **hydrolytic condensation** of silane monomers R1SiX3 (R1 = org. group having acid-decomposable group; X = halo, OH, C1-10 alkoxy or acyl) and optionally other silane monomers R0SiX3 (R0 = org. group for tight adhesion; X = same as above) and (B) polymers having repeating units [R2C(CO2R5)CH2] [R2 = H, Me, F, CF3, CN, CH2CO2R3, CH2OR4; R3 = C1-4 linear or branched alkyl; R4 = H, C1-4 linear or branched alkyl or acyl; R5 = R6R7CCH2SiR8R9R10, R11C(CH2SiR12R13R14)2, C(CH2SiR15R16R17)3, Q1, Q2; R6, R7, R11 = H, C1-10 linear, branched, or cyclic alkyl; R8-R10, R12-R17 = C1-10 linear, branched, or cyclic alkyl, C6-10 aryl, trialkylsilyl, Si-contg. group bonded with Si in the formula by siloxane or silalkylene linkage; R28-R30 = C1-20 linear, branched, or cyclic alkyl; R18, R19, R22, R23, R26, R27, R31, R32, R35, R36, R39-R41 = H, C1-20 linear, branched, or cyclic alkyl; R20, R21, R24, R25, R33, R34, R37, R38 = H, C1-20 linear, branched, or cyclic alkyl, fluorinated C1-20 alkyl, C6-20 aryl; p, q, r, s = 0-10; $1 \leq p + q + s \leq 20$]. Also claimed are compns. contg. A and (C) copolymers of silyl-branched vinyl repeating units and other repeating units having groups whose alk. soly. can be increased by acids (both Markush given). Alternatively, the compns. contain (R1SiOx) (R1 = same as above; x = 1.0-1.5) instead of A. Also

claimed are chem. amplified photoresists contg. the above compns., acid generators, org. solvents, and optionally dissoln. inhibitors. Basic compds. may be contained in the photoresists. In the process, the photoresists are applied on substrates (e.g., semiconductor wafers equipped with photoresist underlayers), heat treated, exposed to high-energy rays or electron beams via **photomasks**, and developed (after further heat treatment) to give patterns. After the patterns are formed, layers under them may be etched with O plasma or with Br- or Cl-contg. halogen gases.

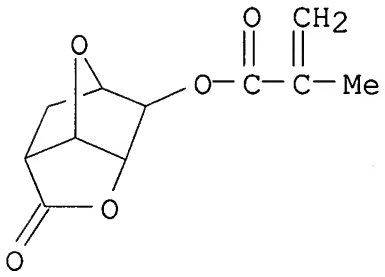
IT **630417-20-8P**
(silsesquioxane-based chem. amplified photoresists with high sensitivity, resoln., and less scums for forming precise patterns)

RN 630417-20-8 HCA

CN 2-Propenoic acid, 2-methyl-, hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl ester, polymer with 4-ethenylphenol and 2-[2,2,2-trimethyl-1,1-bis(trimethylsilyl)disilanyl]ethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

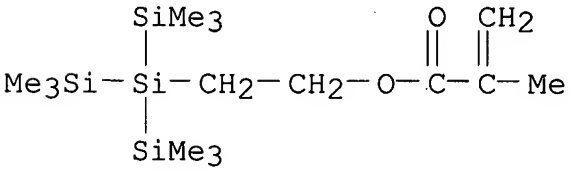
CM 1

CRN 274248-05-4
CMF C11 H12 O5



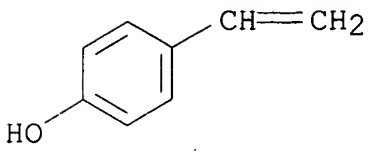
CM 2

CRN 211369-53-8
CMF C15 H36 O2 Si4



CM 3

CRN 2628-17-3
CMF C8 H8 O



IC ICM G03F007-075
ICS C08F030-08; G03F007-039; H01L021-027; C08G077-14
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST chem amplified pos photoresist resoln sensitivity; silsesquioxane pos photoresist patterning **photolithog**; polyhedral oligomeric silsesquioxane branched acrylic photoresist; semiconductor photoresist electron beam high energy lithog; photoresist underlayer etching oxygen plasma halogen gas
IT **Photolithography**
(high-energy ray; silsesquioxane-based chem. amplified photoresists with high sensitivity, resoln., and less scums for forming precise patterns)
IT Phenolic resins, processes
(**novolak**, underlayers; silsesquioxane-based chem. amplified photoresists with high sensitivity, resoln., and less scums for forming precise patterns)
IT 250265-26-0, ARC-DUV 30
(**antireflective** layers; silsesquioxane-based chem. amplified photoresists with high sensitivity, resoln., and less scums for forming precise patterns)
IT **630417-20-8P** 800397-92-6P 802917-23-3P 802986-14-7P 819837-18-8P 862379-20-2P 862379-21-3P 862383-75-3P 862383-77-5P
(silsesquioxane-based chem. amplified photoresists with high sensitivity, resoln., and less scums for forming precise patterns)

L60 ANSWER 2 OF 11 HCA COPYRIGHT 2006 ACS on STN
142:382179 Silicon-containing compositions for spin-on ARC/hard **mask** materials. Angelopoulos, Marie; Huang, Wu-Song; Mahorowila, Arpan P.; Moreau, Wayne; Pfeiffer, Dirk; Scooriyakumaren, Ratnam (USA). U.S. Pat. Appl. Publ. US 2005074689 A1 20050407, 11 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-679782 20031006.
AB **Antireflective** compns. characterized by the presence of an

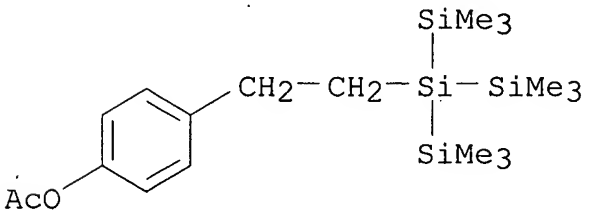
Pres. App

Si-contg. polymer having pendant chromophore moieties are useful **antireflective** coating/hard **mask** compns. in lithog. processes. These compns. provide outstanding optical, mech. and etch selectivity properties while being applicable using spin-on application techniques. The compns. are esp. useful in lithog. processes used to configure underlying material layers on a substrate, esp. metal or semiconductor layers.

IT **849346-61-8P**
(prepn. of silicon-contg. compns. for spin-on ARC/ **hardmask** materials)

RN 849346-61-8 HCA

CN Phenol, 4-[2-[2,2,2-trimethyl-1,1-bis(trimethylsilyl)disilanyl]ethyl]-, acetate (9CI) (CA INDEX NAME)



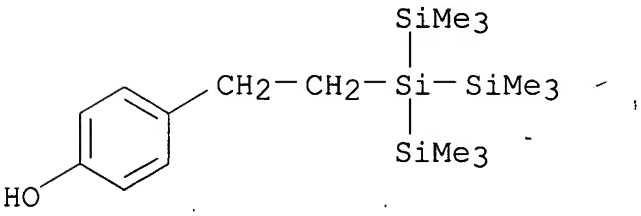
IT **849346-62-9P**
(prepn. of silicon-contg. compns. for spin-on ARC/ **hardmask** materials)

RN 849346-62-9 HCA

CN Formaldehyde, polymer with 4-[2-[2,2,2-trimethyl-1,1-bis(trimethylsilyl)disilanyl]ethyl]phenol (9CI) (CA INDEX NAME)

CM 1

CRN 849346-60-7
CMF C17 H36 O Si4

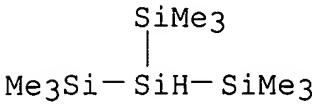


CM 2

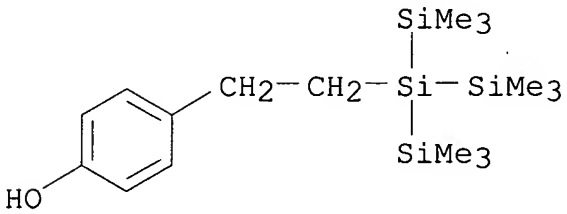
CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

IT **1873-77-4**, Tris(trimethylsilyl)silane
(prepn. of silicon-contg. compns. for spin-on ARC/**hardmask** materials)
RN 1873-77-4 HCA
CN Trisilane, 1,1,1,3,3,3-hexamethyl-2-(trimethylsilyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT **849346-60-7P**
(prepn. of silicon-contg. compns. for spin-on ARC/**hardmask** materials)
RN 849346-60-7 HCA
CN Phenol, 4-[2-[2,2,2-trimethyl-1,1-bis(trimethylsilyl)disilanyl]ethyl]- (9CI) (CA INDEX NAME)



IC ICM G03F007-00
INCL 430270100; 430322000; 430323000; 430324000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photolithog** silicon compn spin **antireflective** coating hard **mask** material
IT **Antireflective** films
Photolithography
(silicon-contg. compns. for spin-on ARC/**hardmask** materials)
IT **849346-61-8P**
(prepn. of silicon-contg. compns. for spin-on ARC/**hardmask** materials)
IT **849346-62-9P**
(prepn. of silicon-contg. compns. for spin-on ARC/**hardmask** materials)
IT **1873-77-4**, Tris(trimethylsilyl)silane 2628-16-2,

4-Acetoxystyrene
(prepn. of silicon-contg. compns. for spin-on ARC/ **hardmask** materials)

IT **849346-60-7P**
(prepn. of silicon-contg. compns. for spin-on ARC/ **hardmask** materials)

L60 ANSWER 3 OF 11 HCA COPYRIGHT 2006 ACS on STN

139:108560 Organoelement resists for EUV lithography. Dai, Junyan; Ober, Christopher Kemper; Wang, Lin; Cerrina, Franco; Nealey, Paul F. (Mater. Sci. Eng., Cornell Univ., Ithaca, NY, 14853, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4690(Pt. 2, Advances in Resist Technology and Processing XIX), 1193-1202 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Extreme-UV (EUV) lithog. is perhaps the most promising of the NGL technologies for sub-100 nm resoln. To address needs in this area, the authors designed and synthesized several types of organo-element resists using only low absorbing elements, including H, C, Si and B. One category is based on silicon-contg. block and random polymers. They show high transparency according to theor. simulations and have high oxygen reactive ion etch resistances compared to **Novolak** resins. In a preliminary study, the authors were able to image these polymers to 180 nm line/space patterns using EUV exposure. A second type of EUV transparent resist platform involves boron-contg. polymers. Carborane carboxylic acid was attached to a copolymer backbone to introduce boron atoms with controlled attachment level. It was found that incorporation of a small amt. of B provides remarkably high oxygen etch resistance.

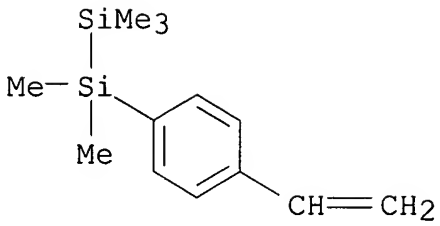
IT **122551-15-9P**, 4-Pentamethyldisilylstyrene-p-chloromethylstyrene copolymer
(synthesis and lithog. properties of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)

RN 122551-15-9 HCA

CN Disilane, (4-ethenylphenyl)pentamethyl-, polymer with 1-(chloromethyl)-4-ethenylbenzene (9CI) (CA INDEX NAME)

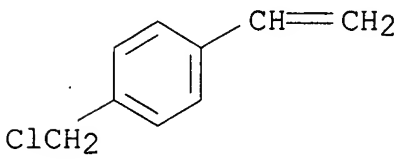
CM 1

CRN 114442-01-2
CMF C13 H22 Si2

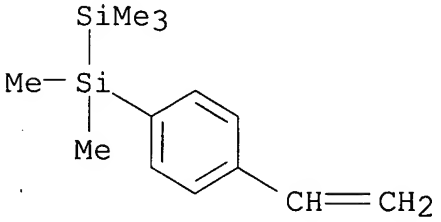


CM 2

CRN 1592-20-7
CMF C9 H9 Cl



IT **114442-01-2P**, 4-Pentamethyldisilylstyrene
(synthesis of silicon-contg. block and random polymers and boron-contg. polymers for resists for extreme-UV lithog.)
RN 114442-01-2 HCA
CN Disilane, (4-ethenylphenyl)pentamethyl- (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 40101-88-0DP, reaction product with **hydrolyzed** isoprene-styrene block copolymer
(hydroboration of isoprene-styrene block copolymer for extreme-UV photoresist application)
IT 617-86-7DP, Triethylsilane, reaction product with isoprene-styrene block copolymer 758-21-4DP, Dimethylethylsilane, reaction product with isoprene-styrene block copolymer 766-77-8DP, Dimethylphenylsilane, reaction product with isoprene-styrene block

copolymer 51458-06-1DP, Dimesitylborane, reaction product with **hydrolyzed** isoprene-styrene block copolymer 105729-79-1DP, Isoprene-styrene block copolymer, hydrosilylation and hydroboration products **122551-15-9P**, 4-Pentamethyldisilylstyrene-p-chloromethylstyrene copolymer 557099-44-2P, p-Trimethylsilylstyrene-isoprene block copolymer 557099-45-3P, p-Trimethylsilylstyrene-p-chloromethylstyrene copolymer
(synthesis and lithog. properties of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)

IT 1009-43-4P, p-Trimethylsilylstyrene **114442-01-2P**, 4-Pentamethyldisilylstyrene
(synthesis of silicon-contg. block and random polymers and boron-contg. polymers for resists for extreme-UV lithog.)

L60 ANSWER 4 OF 11 HCA COPYRIGHT 2006 ACS on STN
130:252841 Polysilanes for resist etching **mask** and formation of resist pattern. Nakano, Yoshihiko; Kani, Rikako; Hayase, Shuji; Sato, Yasuhiko; Miyoshi, Yasuo; Gokawachi, Toru; Yoshikawa, Sawako; Matsuyama, Hideto; Ohnishi, Kiyonobu; Hiraoka, Toshiro; Narita, Masaki (Toshiba Corp., Japan). Jpn. Kokai Tokkyo Koho JP 11060735 A2 19990305 Heisei, 184 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-336655 19971121. PRIORITY: JP 1996-328587 19961209; JP 1997-624 19970107; JP 1997-155553 19970612.

AB Various polysilanes are synthesized and tested for for etching rate under various conditions. The polysilanes are used as etching **masks** for the formation of resist pattern on a substrate, such as silicon wafer. The process for forming a resist pattern is also claimed.

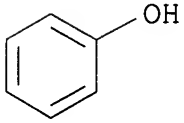
IT **9003-35-4**, **Formaldehyde-phenol** copolymer
9016-83-5, Cresol-formaldehyde copolymer
(crosslinking agent; polysilanes for resist etching **mask** for formation of resist pattern)

RN 9003-35-4 HCA

CN Phenol, polymer with formaldehyde (9CI) (CA INDEX NAME)

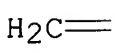
CM 1

CRN 108-95-2
CMF C6 H6 O



CM 2

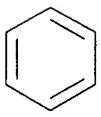
CRN 50-00-0
CMF C H2 O

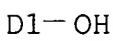


RN 9016-83-5 HCA
CN Formaldehyde, polymer with methylphenol (9CI) (CA INDEX NAME)

CM 1

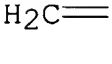
CRN 1319-77-3
CMF C7 H8 O
CCI IDS





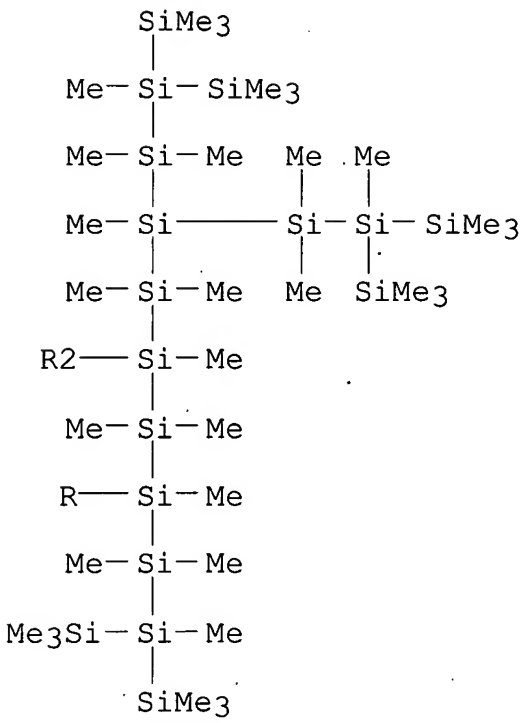
CM 2

CRN 50-00-0
CMF C H2 O

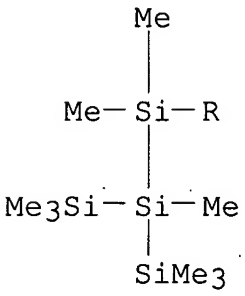


IT **221378-93-4 221379-17-5 221548-50-1**
(polysilanes for resist etching **mask** for formation of resist pattern)
RN 221378-93-4 HCA
CN Undecasilane, 4,8-bis[1,1,2,3,3,3-hexamethyl-2-(trimethylsilyl)trisilanyl]-6-[2-[1,1,2,3,3,3-hexamethyl-2-(trimethylsilyl)trisilanyl]-1,1,2,3,3,4,5,5,5-nonamethyl-4-(trimethylsilyl)pentasilanyl]-1,1,1,2,3,3,4,5,5,6,7,7,8,9,9,10,11,11,11-nonadecamethyl-2,10-bis(trimethylsilyl)- (9CI) (CA INDEX NAME)

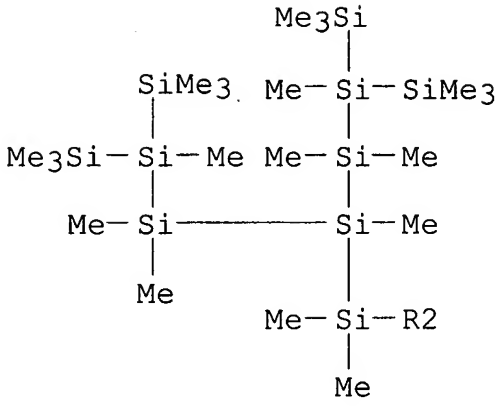
PAGE 1-A



PAGE 2-A



PAGE 3-A



RN 221379-17-5 HCA
CN Poly[(1,1,2,3-tetramethylsilacyclopenta-2,4-dienediyl)(1,1,2,2-tetramethyl-1,2-disilanediyl)] (9CI) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 221548-50-1 HCA
CN Tridecasilane, 5,9-bis[1,1,2,3,3,4-hexamethyl-4,4-diphenyl-2-(1,1,2-trimethyl-2,2-diphenyldisilanyl)tetrasilanyl]-7-[2-[1,1,2,3,3,4-hexamethyl-4,4-diphenyl-2-(1,1,2-trimethyl-2,2-diphenyldisilanyl)tetrasilanyl]-1,1,2,3,3,4,5,5,6-nonamethyl-6,6-diphenyl-4-(1,1,2-trimethyl-2,2-diphenyldisilanyl)hexasilanyl]-1,2,2,3,4,4,5,6,6,7,9,10,10,11,12,12,13-heptadecamethyl-1,1,8,8,13,13-hexaphenyl-3,11-bis(1,1,2-trimethyl-2,2-diphenyldisilanyl)- (9CI) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IC ICM C08G077-60
ICS G03F007-075
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 74, 76
ST polysilane etching **mask** resist pattern formation
IT Epoxy resins, reactions
Phenolic resins, reactions
Polysiloxanes, reactions
(crosslinking agent; polysilanes for resist etching **mask** for formation of resist pattern)
IT Etching
Etching **masks**
Resists
Semiconductor devices
(polysilanes for resist etching **mask** for formation of resist pattern)
IT Polysilanes
(polysilanes for resist etching **mask** for formation of

resist pattern)

IT Dendritic polymers
(polysilanes; polysilanes for resist etching **mask** for formation of resist pattern)

IT 71-43-2D, Benzene, polymethylenephenylenes, hydroxy derivs., epoxy-contg., reactions 91-20-3D, Naphthalene, polymethylenenaphthalenes, hydroxy derivs., amino derivs., epoxy derivs., reactions 120-12-7D, Anthracene, polymethyleneanthracenes, hydroxy derivs., amino derivs., epoxy derivs., reactions 694-59-7, Pyridine N-oxide 919-30-2, γ-Aminopropyltriethoxysilane 2386-87-0 **9003-35-4**, **Formaldehyde-phenol** copolymer 9005-12-3, Methylphenylsilanediol homopolymer, sru 9016-00-6, Dimethylsilanediol homopolymer, sru **9016-83-5**, Cresol-formaldehyde copolymer 18042-57-4 25087-26-7, Polymethacrylic acid 29226-39-9, Diphenylsilanediol homopolymer 31230-04-3, Methylphenylsilanediol homopolymer 31900-57-9, Dimethylsilanediol homopolymer 32129-24-1, Diphenylsilanediol homopolymer, sru 57912-91-1 164652-59-9 221379-58-4 221379-59-5 221379-60-8 221379-61-9 221379-62-0 221379-63-1 221548-16-9 221548-17-0
(crosslinking agent; polysilanes for resist etching **mask** for formation of resist pattern)

IT 10026-04-7, Silicon tetrachloride
(for prepn. of silicon nanocluster; prepn. of polysilanes for resist etching **mask** for formation of resist pattern)

IT 75-77-4DP, Trimethylchlorosilane, reaction products with polysilanes 98387-81-6DP, Dichlorodiphenylsilane-dichloromethylphenylsilane copolymer, reaction products with trimethylchlorosilane 188610-82-4P 209416-72-8P 212334-44-6DP, reaction products with trimethylchlorosilanex 221378-62-7DP, reaction products with trimethylchlorosilane 221378-63-8DP, reaction products with trimethylchlorosilane 221378-65-0DP, reaction products with trimethylchlorosilane 221378-70-7P 221378-72-9P 221378-74-1P 221378-75-2P 221378-76-3DP, reaction products with trimethylchlorosilane 221378-77-4P 221378-78-5DP, reaction products with trimethylchlorosilane 221378-79-6P 221378-80-9DP, reaction products with trimethylchlorosilane 221379-00-6DP, Dichlorodiphenylsilane-1,4-bis(chloromethylphenylsilyl)benzene copolymer, reaction products with trimethylchlorosilane 221379-12-0P
(polysilanes for resist etching **mask** for formation of resist pattern)

IT 1217-45-4, 9,10-Anthracenedicarbonitrile 1518-16-7, TCNQ
(polysilanes for resist etching **mask** for formation of resist pattern)

IT 935-14-8D, 1,4-Diethynylbenzene, polymers with polysilanes 1631-84-1D, Dichlorophenylsilane, polymers with diethynylbenzene

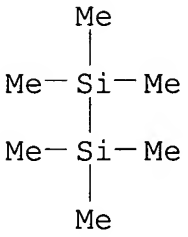
derivs. 29468-75-5 31324-77-3, Dichloromethylphenylsilane homopolymer 41087-22-3, Phenyltrichlorosilane homopolymer 76188-55-1, Dichloromethylphenylsilane homopolymer, sru 95584-36-4, Dichlorophenylsilane homopolymer, sru 98387-81-6 99936-07-9, Dichlorophenylsilane homopolymer 99936-08-0, Dichloromethylsilane homopolymer 99936-09-1 105064-43-5, Poly(methylsilylene) 113219-09-3, Cyclohexyltrichlorosilane homopolymer 127028-87-9 135266-27-2 143558-05-8, Dichlorodiphenylsilane-dichlorophenylsilane copolymer 162411-15-6 173341-63-4 186906-67-2, Poly(2-naphthalenylsilylene) 192663-98-2 192726-24-2, Poly[[(trifluoromethyl)phenyl]silylene] 212334-27-5, Dichloro-1-naphthylsilane homopolymer 212334-29-7, Poly(1-naphthalenylsilylene) 212334-42-4, Dichlorodiphenylsilane-1,2-bis(dichlorophenylsilyl)ethane copolymer 213206-64-5 221378-61-6 221378-64-9 221378-66-1 221378-67-2 221378-68-3 221378-81-0 221378-82-1 221378-83-2 221378-84-3 221378-85-4 221378-86-5 221378-87-6 221378-88-7 221378-89-8 221378-90-1 221378-91-2 221378-92-3 **221378-93-4** 221378-94-5 221378-95-6, Dichlorodiphenylsilane-dichloroethylphenylsilane copolymer 221378-96-7 221378-97-8 221378-98-9 221378-99-0 221379-00-6 221379-02-8 221379-03-9 221379-04-0 221379-06-2 221379-07-3 221379-08-4 221379-09-5 221379-10-8 221379-11-9 221379-13-1 221379-14-2 221379-15-3 221379-16-4 **221379-17-5** 221379-18-6 221379-19-7 221379-20-0 221379-21-1 221379-22-2 221379-23-3 221379-25-5 221379-26-6 221379-27-7 221379-28-8 221379-29-9 221379-30-2 221379-31-3 221379-32-4 221379-35-7 221379-38-0 221379-40-4 221379-43-7 221379-45-9 221379-47-1 221379-49-3 221379-50-6 221379-51-7 221379-52-8 221379-54-0 221379-56-2 221379-65-3 221379-66-4, Poly(2-anthracenylsilylene) 221379-67-5 221379-68-6 221379-69-7 221379-70-0 221379-71-1, Poly(methyl-1-naphthalenylsilylene) 221548-14-7 221548-15-8 **221548-50-1** 221633-63-2 221633-64-3 221633-66-5 221633-68-7 221633-70-1 221633-72-3 221633-74-5 221633-75-6 221633-77-8 221633-79-0 221633-81-4 221633-83-6 221633-85-8 221633-87-0 221658-75-9
(polysilanes for resist etching **mask** for formation of resist pattern)

IT 153700-08-4, APEX E 183023-97-4, TDUR N908 202218-68-6, TDUR P007
(polysilanes for resist etching **mask** for formation of resist pattern)

IT 15411-17-3P 209416-71-7P
(prepn. of polysilanes for resist etching **mask** for formation of resist pattern)

IT 124-70-9 754-75-6 1066-35-9, Dimethylchlorosilane 79343-32-1
(prepn. of polysilanes for resist etching **mask** for formation of resist pattern)

L60 ANSWER 5 OF 11 HCA COPYRIGHT 2006 ACS on STN
124:74066 Manufacture of resist patterns. Yoshimura, Toshuki; Shiraishi, Hiroshi; Yamamoto, Jiro; Okazaki, Shinji (Hitachi Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07297100 A2 19951110 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-84366 19940422.
AB The manufg. process comprises the steps of: forming a cresol **novolak** layer on a Si substrate; forming a monomol. layer of hexamethyl disilane on the resin layer by vapor absorption; removing the disilane layer pattern-wisely by electron beam; forming a SiO2 **mask** layer from the remaining disilane layer by O2 plasma; and forming a patterned resin layer using the SiO2 **mask** also by O2 plasma.
IT **1450-14-2**, Hexamethyl disilane
(manuf. of resist patterns)
RN 1450-14-2 HCA
CN Disilane, hexamethyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM H01L021-027
ICS G03F007-095; G03F007-26; H01L021-3065; H01L021-31
CC 76-3 (Electric Phenomena)
ST hexamethyl disilane **novolak** silica lithog; cresol **novolak** resin hexamethyl disilane; electron beam lithog resist pattern manuf
IT Phenolic resins, uses
(**novolak**, cresol-based, uses; manuf. of resist patterns)
IT **1450-14-2**, Hexamethyl disilane 7631-86-9, Silica, uses 7782-44-7, Oxygen, uses
(manuf. of resist patterns)

L60 ANSWER 6 OF 11 HCA COPYRIGHT 2006 ACS on STN
121:191052 Study of dry development in terms of resist and development method. Abe, N.; Motoyama, T. (Process Dev. Div., Fujitsu Ltd., Kawasaki, 211, Japan). Materials Science Forum, 140-142(Plasma Properties, Deposition and Etching), 727-40 (English) 1993. CODEN: MSFOEP. ISSN: 0255-5476.
AB The authors propose a dry development system which they examd. in

terms of a resist and development method. The resist was an olefinic polymer and an addn. agent mixt. The authors found that, in dry development, the remaining thickness of the resist was dependent on the development method and that ozone and O2/CF4 downstream development (development downstream from the O2/CF4 plasma) gave much higher remaining thickness than the O2 plasma development which has been studied widely. O2/CF4 downstream development was found to be esp. useful (it gave a remaining thickness of 90 % and a resoln. around 1.0 μm). Based on these results, the authors also studied dry-developable bi-level resist. The resist was a mixt. of poly(4,4,7,7-tetramethyl-4,7-disila-2-octane) and 3,3'-diazidediphenylmethane. The resist was developed (downstream from O2/CF4 plasma) to produce 0.30 μm lines and space neg. patterns which were transferred into a 1.8 μm thick planarization layer by O2 ECR etching. The etching ratio of the resist vs. a hard baked **Novolak** photoresist was about 1:50.

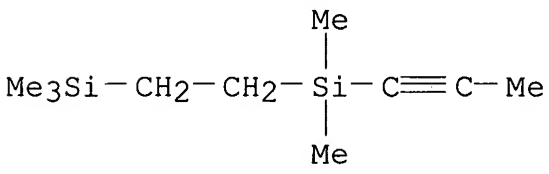
IT **100858-83-1**, Poly(4,4,7,7-tetramethyl)-4,7-disila-2-octyne
(bilevel resist contg. diazide-diphenylmethane, dry development of, using oxygen plasma and oxygen/tetrafluoromethane mixt. and ozone)

RN 100858-83-1 HCA

CN Silane, [2-(dimethyl-1-propynylsilyl)ethyl]trimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 99247-41-3
CMF C10 H22 Si2



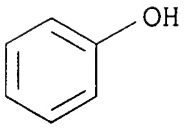
IT **9003-35-4, Phenol-formaldehyde** co-polymer
(etching of, using oxygen plasma and oxygen/tetrafluoromethane mixt. and ozone, in study of dry development of resists)

RN 9003-35-4 HCA

CN Phenol, polymer with formaldehyde (9CI) (CA INDEX NAME)

CM 1

CRN 108-95-2
CMF C6 H6 O



CM 2

CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

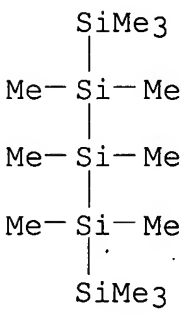
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT Phenolic resins, uses
(**novolak**, etching of, using oxygen plasma and oxygen/tetrafluoromethane mixt. and ozone, in study of dry development of resists)
IT **Lithography**
(**photo-**, dry development system for, based on oxidizability of resist's polymeric components)
IT **100858-83-1**, Poly(4,4,7,7-tetramethyl)-4,7-disila-2-octyne
(bilevel resist contg. diazide-diphenylmethane, dry development of, using oxygen plasma and oxygen/tetrafluoromethane mixt. and ozone)
IT 9003-31-0, Polyisoprene **9003-35-4**, **Phenol-formaldehyde** co-polymer 9011-14-7, PMMA 29296-32-0, Poly(4-Chloromethylstyrene)
(etching of, using oxygen plasma and oxygen/tetrafluoromethane mixt. and ozone, in study of dry development of resists)

L60 ANSWER 7 OF 11 HCA COPYRIGHT 2006 ACS on STN
120:204337 New silicon-rich silylating reagents for dry-developed positive-tone deep-ultraviolet lithography. Wheeler, David R.; Hutton, Skip; Stein, Susan; Baiocchi, Frank; Cheng, May; Taylor, Gary (Dep. 1811, Sandia Natl. Lab., Albuquerque, NM, 87185, USA). Journal of Vacuum Science & Technology, B: Microelectronics and Nanometer Structures, 11(6), 2789-93 (English) 1993. CODEN: JVTBD9. ISSN: 0734-211X.
AB Disilanes are used as silylating reagents for near-surface imaging with deep UV (248 nm) light. A relatively thin imaging layer of a photo-crosslinking resist spun over a thicker layer of hard-baked resist which functions as a planarizing layer and **antireflective** coating. Photoinduced acid generation and

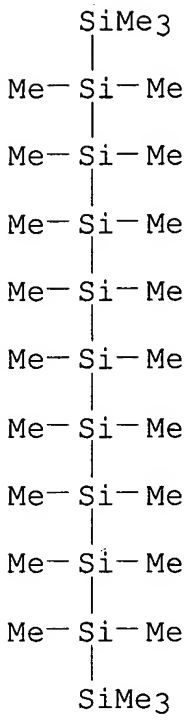
subsequent heating cross-links exposed areas and renders them impermeable to an aminodisilane which reacts with the unexposed regions. Subsequent O2 reactive-ion etching affords a pos.-tone image in the resist. The use of disilanes introduces a higher concn. of silicon into the polymer than is possible with silicon reagents that incorporate only one silicon atom per reactive site. The higher silicon content in the silylated polymer increases etching selectivity between exposed and unexposed regions and thereby increases the contrast. The authors have resolved high-aspect ratio, 0.25 μm line and space patterns with 248 nm light in a stepper with a numerical aperture of 0.48.

IT **3704-46-9**, Dodecamethylpentasilane **4774-84-9**
26798-98-1, N,N-Dimethylaminopentamethyldisilane
78635-80-0, N-Methylaminopentamethyldisilane
(silylating reagent for dry-developed pos.-tone deep-UV lithog.)

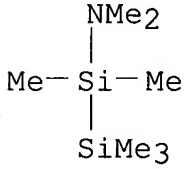
RN 3704-46-9 HCA
CN Pentasilane, dodecamethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



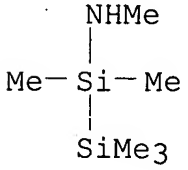
RN 4774-84-9 HCA
CN Undecasilane, tetracosamethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 26798-98-1 HCA
CN Disilanamine, heptamethyl- (9CI) (CA INDEX NAME)



RN 78635-80-0 HCA
CN Disilanamine, N,1,1,2,2,2-hexamethyl- (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST silicon rich silylating reagent UV **photolithog**; disilane

silylating reagent deep UV **photolithog**; bilayer photoresist disilane silylating agent lithog

IT Phenolic resins, uses
(**novolak**, photoresist compn. contg., improved resoln. using disilanes and bilayer resist scheme)

IT Phenolic resins, uses
(**novolak**, cresol-based, photoresist compn. contg., improved resoln. using disilanes and bilayer resist scheme)

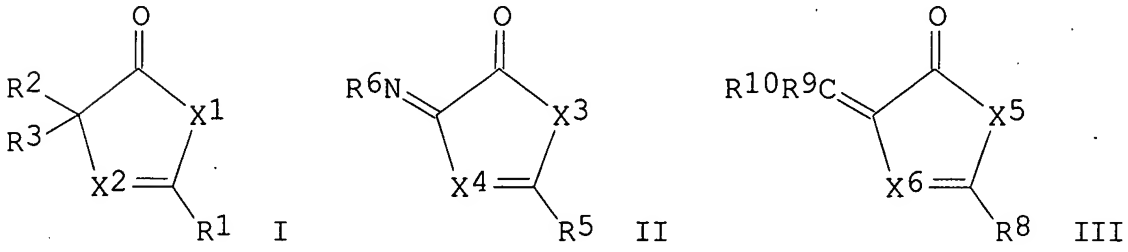
IT **Lithography**
(**photo**-, UV, submicron, silicon-rich silylating reagents for dry-developed pos.-tone)

IT 2083-91-2, Dimethylaminotrimethylsilane 2875-98-1 **3704-46-9**, Dodecamethylpentasilane **4774-84-9** 22705-32-4, N,N-Dimethylaminodimethylsilane **26798-98-1**, N,N-Dimethylaminopentamethyldisilane 28883-63-8, Poly(dimethylsilane) 38041-04-2, Octamethylcyclotetrasilane 72059-93-9 **78635-80-0**, N-Methylaminopentamethyldisilane
(silylating reagent for dry-developed pos.-tone deep-UV lithog.)

L60 ANSWER 8 OF 11 HCA COPYRIGHT 2006 ACS on STN

117:121564 Photosensitive composition containing phenol polymer and 5-membered ring heterocyclic compound. Kobayashi, Yoshikimi; Onishi, Kiyonobu; Niki, Hiroichi; Kawamonzen, Yoshihiro (Toshiba Corp., Japan). Jpn. Kokai Tokkyo Koho JP 03208056 A2 19910911 Heisei, 44 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-2543 19900111.

GI



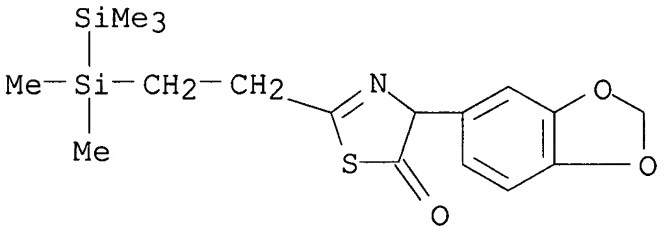
AB A photosensitive compn. contains a phenol-type alkali-sol. polymer, a 5-membered ring heterocyclic compd. [I, II, or III; X1, X3, X5 = O, S; X2 = N, CR4; X4 = N, CR7; X6 = N, CR11; R1-R11 = H, (un)substituted heterocyclyl or arom. or aliph. hydrocarbyl, other functional group; or R2R3 or R9R10 may form a carbo- or heterocyclic ring], and a compd. generating an acid upon light irradn. Preferably at least one of the substituents R1-R3 in I, R5 and R6 in II, or R8-R10 in III is a Si-contg. functional group and a phenol-type Si-contg. alkali-sol. polymer is used. The

photosensitive compn. can be exposed by a short wavelength radiation such as deep UV, shows excellent resistance against dry etching and O-reactive ion etching, has large tolerance in exposure and development by an aq. alkali soln., can form detailed patterns having good cross-sectional shapes, and is suitable for alkali-developable single- or double-layer lithog. process. The acid released by the deep UV irradn. of the photosensitive compn. decomps. I-III, increases the alkali soly. of the compn., and allows the exposed parts to dissolve by alkali development to give pos. patterns. Neg. patterns are also formed by exposure , heat treatment, and alkali development. Using the pos. patterns as the **masks** against polymer underlayers, dry etching gives double-layer patterns with good aspect ratios and cross-sectional shapes. Typically it gives neg.- or pos.-working patterns having line width or line-to-line distance of 0.3μm.

IT **139330-71-5 139330-72-6 139330-83-9**
(alkali-developable photosensitive compn. contg. phenol resin and, for patterning)

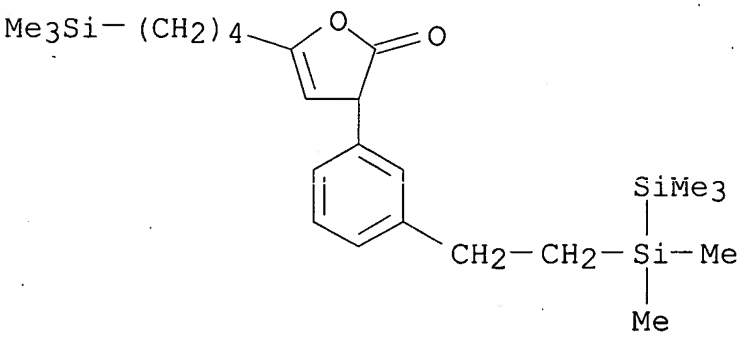
RN 139330-71-5 HCA

CN 5(4H)-Thiazolone, 4-(1,3-benzodioxol-5-yl)-2-[2-(pentamethyldisilanyl)ethyl]- (9CI) (CA INDEX NAME)



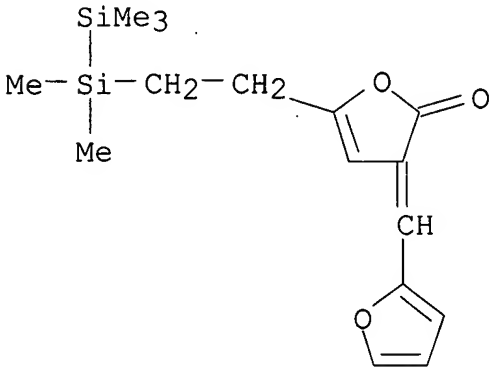
RN 139330-72-6 HCA

CN 2(3H)-Furanone, 3-[3-[2-(pentamethyldisilanyl)ethyl]phenyl]-5-[4-(trimethylsilyl)butyl]- (9CI) (CA INDEX NAME)



RN 139330-83-9 HCA

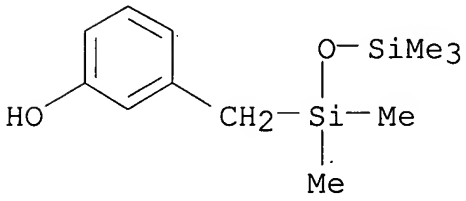
CN 2(3H)-Furanone, 3-(2-furanylmethylene)-5-[2-(pentamethyldisilanyl)ethyl]- (9CI) (CA INDEX NAME)



IT **119588-34-0**
(alkali-developable photosensitive compn. contg., for patterning)
RN 119588-34-0 HCA
CN Formaldehyde, polymer with 3-methylphenol, 4-methylphenol and 3-[(pentamethyldisiloxanyl)methyl]phenol (9CI) (CA INDEX NAME)

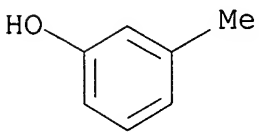
CM 1

CRN 119588-33-9
CMF C12 H22 O2 Si2



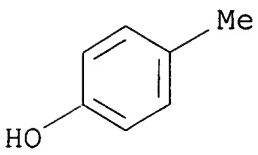
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

CRN 106-44-5
CMF C7 H8 O



CM 4

CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

IC ICM G03F007-038
ICS G03F007-031; G03F007-075; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT Phenolic resins, uses
(**novolak**, alkali-developable photoresists contg. pyranone or azolone derivs. and acid-releasing compds. and, for patterning)
IT 842-74-0 881-90-3 4855-22-5 6412-89-1 7563-05-5 16446-30-3
38502-38-4 139330-31-7 139330-32-8 139330-33-9 139330-34-0
139330-35-1 139330-36-2 139330-37-3 139330-38-4 139330-39-5
139330-40-8 139330-41-9 139330-42-0 139330-43-1 139330-44-2
139330-45-3 139330-46-4 139330-47-5 139330-48-6 139330-49-7
139330-50-0 139330-51-1 139330-52-2 139330-53-3 139330-54-4
139330-55-5 139330-56-6 139330-57-7 139330-58-8 139330-60-2
139330-61-3 139330-62-4 139330-63-5 139330-64-6 139330-65-7
139330-66-8 139330-67-9 139330-68-0 139330-69-1 139330-70-4
139330-71-5 **139330-72-6** 139330-73-7
139330-74-8 139330-75-9 139330-76-0 139330-77-1 139330-78-2
139330-79-3 139330-80-6 139330-81-7 139330-82-8
139330-83-9 139359-44-7 139359-46-9 139359-47-0
141830-76-4 141954-16-7
(alkali-developable photosensitive compn. contg. phenol resin and, for patterning)
IT 24979-70-2, Poly(p-vinylphenol) **119588-34-0**
(alkali-developable photosensitive compn. contg., for patterning)

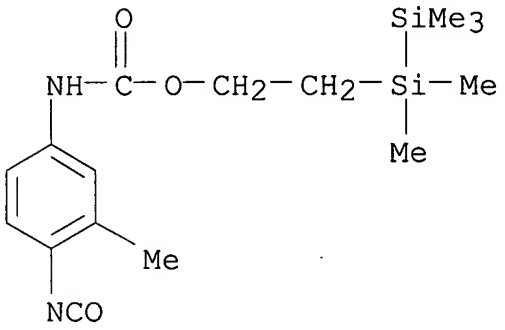
L60 ANSWER 9 OF 11 HCA COPYRIGHT 2006 ACS on STN
112:189018 Photoresists containing aqueous alkali solution-soluble, silanyl group-containing binders. Wilharm, Peter; Buhr, Gerhard; Fuchs, Juergen (Hoechst A.-G., Fed. Rep. Ger.). Ger. Offen. DE 3811242 A1 19891019, 25 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1988-3811242 19880402.

AB The title binders, their prepn., and their use in prepg. pos.- and neg.-working photoresists are described. Photoresists contg. these binders are plasma-etchable and storage-stable and also show high heat stability. Thus, a soln. contg. a 2-(pentamethyldisilanyl)ethyl isocyanate-modified cresol-**HCHO** novolak resin, 2,3,4-trihydroxybenzophenone 1,2-naphthoquinone-2-diazide-5-sulfonyl chloride, Et glycol acetate, BuOAc, and xylene was coated on a Si wafer, dried, imagewise exposed, and then developed with aq. NaOH to give a pos. resist image having excellent resistance to plasma etching.

IT **126050-64-4DP**, reaction product with tannin
(prepn. and reaction of)

RN 126050-64-4 HCA

CN Carbamic acid, (4-isocyanato-3-methylphenyl)-, 2-(pentamethyldisilanyl)ethyl ester (9CI) (CA INDEX NAME)



IC ICM C08G008-28
ICS C08F008-42; C08F030-08; G03F007-08; G03F007-10

ICA C08F008-00; C08F008-14; C08F008-30; C08F012-24; C08F016-06; C08F016-38; C08F020-26; C08F020-30

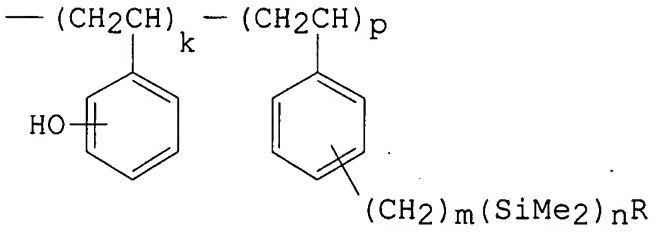
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 556-52-5D, Oxiranemethanol, reaction product with cresol-**formaldehyde** copolymer and (pentamethyldisilanyl)ethyl isocyanate 9016-83-5D, Cresol **formaldehyde** copolymer, reaction product with silyl group-contg. compds. 38333-84-5D, reaction product with silanyl group-contg. compds. 126050-58-6D, reaction product with phenolic resins
(pos.-working photoresist compns. contg., for improved resistance to plasma etching)

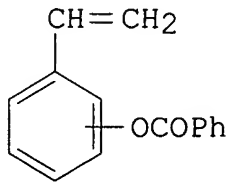
IT 9002-89-5DP, Poly(vinyl alcohol), modified, esters with endo-anti-pentamethyldisilanylbicycloheptenedicarboxylic acid anhydride 56090-54-1DP, Triglycerol, glycidyl ether, reaction product with cresol-**formaldehyde** copolymer and (pentamethyldisilanyl)ethylepoxypropylcarbaminic acid and tris(trimethylsilyl)silanylethyl isocyanate 125997-74-2DP, reaction product with bis(pentamethyldisilanylethyl)carbodiimide 126050-60-0DP, reaction product with acetone-pyrogallol copolymers 126050-61-1DP, esters with modified poly(vinyl alc.) 126050-62-2DP, reaction product with hydroxyethyl methacrylate-pyrocatechol monomethacrylate copolymer 126050-63-3DP, reaction product with cresol-**formaldehyde** copolymer and triglycerin glycidyl ether and tris(trimethylsilyl)silanylethyl isocyanate **126050-64-4DP**, reaction product with tannin 126050-65-5DP, reaction product with (pentamethyldilsilanylethyl)epoxypropylphenol and poly(vinylphenol) 126050-66-6P 126069-63-4P 126069-64-5DP, reaction product with (pentamethyldisilanylethyl)epoxypropylphenol and poly(vinylphenol) 126069-65-6DP, reaction product with poly(vinyl alc.) hydroxybenzals 126069-66-7P
(prepn. and reaction of)

L60 ANSWER 10 OF 11 HCA COPYRIGHT 2006 ACS on STN
111:164245 Resists, and pattern formation using the same. Gokochi, Tooru; Tada, Tsukasa; Watanabe, Haruaki (Toshiba Corp., Japan). Jpn. Kokai Tokkyo Koho JP 01088446 A2 19890403 Heisei, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-245402 19870929.

GI



I



II

AB The title resists mainly consists of copolymers I (R = Me, allyl, vinyl; k, p ≥1; m = 0 - 2; n = 1-3). Pattern formation involves formation of a polymer layer on substrates, coating with a layer of the above resist, exposure, and development to form upper resist pattern, and dry etching in O plasma. These resists are highly sensitive to radiations and provide patterns by development with alkali solns. with suppressed swelling, and are suitable for pattern formation by bilevel resists. Thus, a monomer II was

copolymd. with p-trimethylsilylstyrene (from 4-chlorostyrene, by Grignard reaction) in 2:1 ratio, and **hydrolyzed** at the ester group. Etching rate of a layer of this copolymer on Si wafer by O plasma was 38.7 Å/min, when a **novolak** resist was etched at a rate 240 Å/min. A bilevel resist having an OFPR800 (**novolak**) resist layer and an invention resist layer contg. 4,4'-diazidodiphenylsulfone gave pattern resolving 0.25-μm lines, using electron beam for patterning (with sensitivity 27 μC/cm2) and 5% Me4NOH as developer.

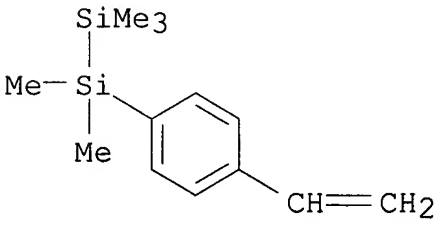
IT **122953-17-7D, hydrolyzed 122953-19-9D, hydrolyzed 122953-20-2D, hydrolyzed**
(as resist layer, for high etching resistance)

RN 122953-17-7 HCA

CN Phenol, 4-ethenyl-, benzoate, polymer with (4-ethenylphenyl)pentamethyldisilane (9CI) (CA INDEX NAME)

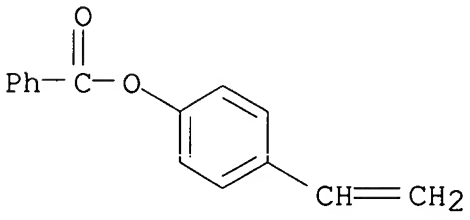
CM 1

CRN 114442-01-2
CMF C13 H22 Si2



CM 2

CRN 32568-59-5
CMF C15 H12 O2

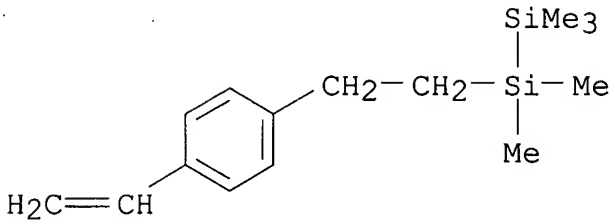


RN 122953-19-9 HCA

CN Phenol, 4-ethenyl-, benzoate, polymer with [2-(4-ethenylphenyl)ethyl]pentamethyldisilane (9CI) (CA INDEX NAME)

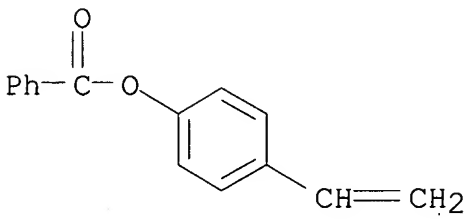
CM 1

CRN 122953-18-8
CMF C15 H26 Si2



CM 2

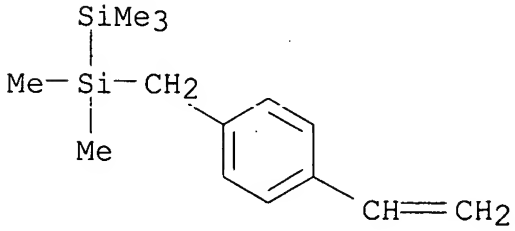
CRN 32568-59-5
CMF C15 H12 O2



RN 122953-20-2 HCA
CN Phenol, 4-ethenyl-, benzoate, polymer with [(4-ethenylphenyl)methyl]pentamethyldisilane (9CI) (CA INDEX NAME)

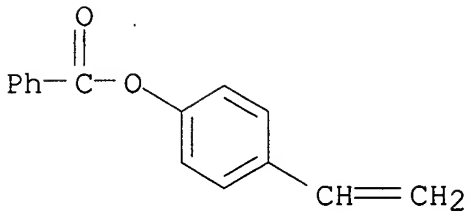
CM 1

CRN 114975-45-0
CMF C14 H24 Si2

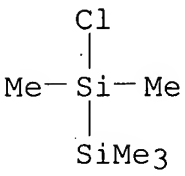


CM 2

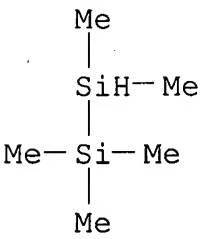
CRN 32568-59-5
CMF C15 H12 O2



IT **1560-28-7**
(reaction of, with Grignard product of chlorostyrene, polymers for resists from)
RN 1560-28-7 HCA
CN Disilane, chloropentamethyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT **812-15-7**, Pentamethyldisilane
(reaction of, with divinylbenzene, polymers for resists from)
RN 812-15-7 HCA
CN Disilane, pentamethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM G03C001-71
ICS G03C001-71; G03C001-72; G03F007-08
ICA H01L021-30
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST photoresist bilevel silicon contg polystyrene; resist electron **novolak** etching resistant
IT 122953-15-5D, **hydrolyzed** 122953-16-6D,

hydrolyzed 122953-17-7D, hydrolyzed 122953-19-9D, hydrolyzed 122953-20-2D, hydrolyzed 122953-22-4D, **hydrolyzed**
(as resist layer, for high etching resistance)

IT 75-77-4, Trimethylchlorosilane, reactions **1560-28-7**
(reaction of, with Grignard product of chlorostyrene, polymers for resists from)

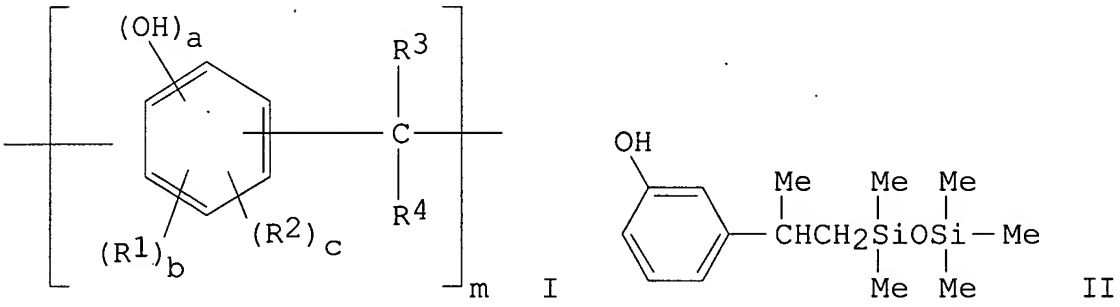
IT **812-15-7**, Pentamethyldisilane
(reaction of, with divinylbenzene, polymers for resists from)

L60 ANSWER 11 OF 11 HCA COPYRIGHT 2006 ACS on STN

110:125491 Photosensitive coating composition containing silicon-containing polymer. Horiguchi, Rumiko; Hayase, Shuzi; Onishi, Yasunobu (Toshiba Corp., Japan). Ger. Offen. DE 3810247 A1 19881006, 44 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1988-3810247 19880325. PRIORITY: JP 1987-72113 19870326; JP 1987-245497 19870929; JP 1987-263965 19871021.

GI

=5063,134



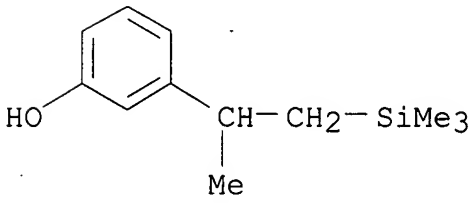
AB The title compn. contains a photosensitive material and a polymer having recurring units of the formula I [R1-R4 = H, alkyl, alkoxy, alkyl; ≥1 of R1-R4 is a Si-contg. C1-10 alkyl group; m = pos. integer; a, b = 1-3; c = 0-2; a + b + c ≤ 4]. The material has improved resistance to O plasma and can be used in **photolithog.** applications. Thus, a mixt. of II-m-cresol-p-cresol-**HCHO** copolymer and 2,3,4-trihydroxybenzophenone bis(1,2-naphthoquinone-2-diazido-5-sulfonate) was used to form a photoresist layer.

IT **119588-19-1 119588-25-9 119588-27-1 119588-29-3 119588-30-6 119588-31-7 119588-34-0 119608-20-7 119608-22-9 119608-23-0 119608-25-2 119608-27-4 119608-29-6 119608-31-0 119608-32-1 119608-33-2**
(photoresist contg.)

RN 119588-19-1 HCA
CN Formaldehyde, polymer with 3-methylphenol and 3-[1-methyl-2-(trimethylsilyl)ethyl]phenol (9CI) (CA INDEX NAME)

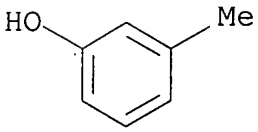
CM 1

CRN 119588-18-0
CMF C12 H20 O Si



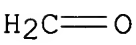
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

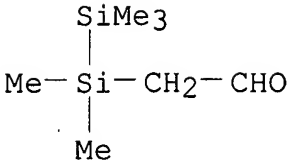
CRN 50-00-0
CMF C H2 O



RN 119588-25-9 HCA
CN Acetaldehyde, (pentamethyldisilanyl)-, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

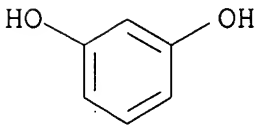
CM 1

CRN 119588-24-8
CMF C7 H18 O Si2



CM 2

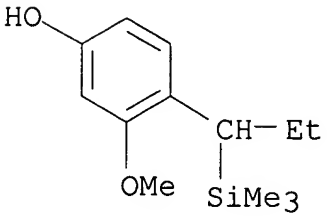
CRN 108-46-3
CMF C6 H6 O2



RN 119588-27-1 HCA
CN Formaldehyde, polymer with 3-methoxy-4-[1-(trimethylsilyl)propyl]phenol and 3-methylphenol (9CI) (CA INDEX NAME)

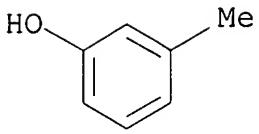
CM 1

CRN 119588-26-0
CMF C13 H22 O2 Si



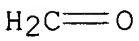
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

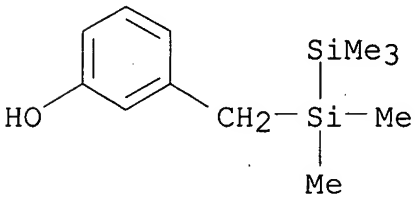
CRN 50-00-0
CMF C H2 O



RN 119588-29-3 HCA
CN Formaldehyde, polymer with 1,3-benzenediol and 3-[(pentamethyldisilanyl)methyl]phenol (9CI) (CA INDEX NAME)

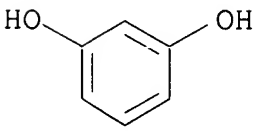
CM 1

CRN 119588-28-2
CMF C12 H22 O Si2



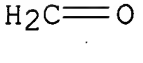
CM 2

CRN 108-46-3
CMF C6 H6 O2



CM 3

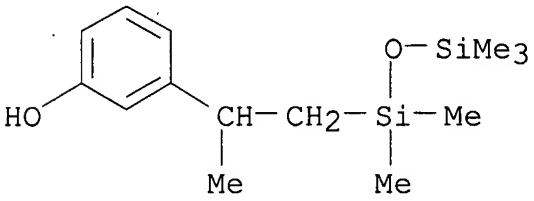
CRN 50-00-0
CMF C H2 O



RN 119588-30-6 HCA
CN Formaldehyde, polymer with 1,4-benzenediol and 3-[1-methyl-2-(pentamethyldisiloxanyl)ethyl]phenol (9CI) (CA INDEX NAME)

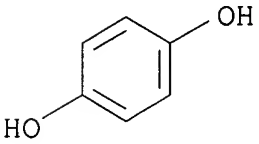
CM 1

CRN 119564-73-7
CMF C14 H26 O2 Si2



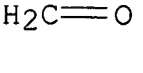
CM 2

CRN 123-31-9
CMF C6 H6 O2



CM 3

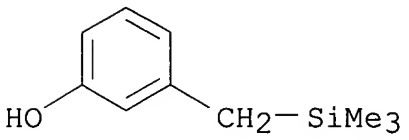
CRN 50-00-0
CMF C H2 O



RN 119588-31-7 HCA
CN Propanal, 3-(trimethylsilyl)-, polymer with formaldehyde, 3-methylphenol and 3-[(trimethylsilyl)methyl]phenol (9CI) (CA INDEX NAME)

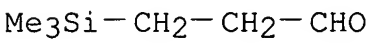
CM 1

CRN 101145-03-3
CMF C10 H16 O Si



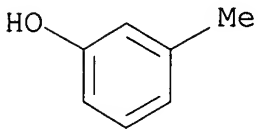
CM 2

CRN 18146-03-7
CMF C6 H14 O Si



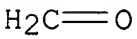
CM 3

CRN 108-39-4
CMF C7 H8 O



CM 4

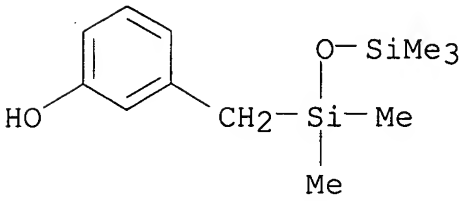
CRN 50-00-0
CMF C H2 O



RN 119588-34-0 HCA
CN Formaldehyde, polymer with 3-methylphenol, 4-methylphenol and 3-[(pentamethyldisiloxanyl)methyl]phenol (9CI) (CA INDEX NAME)

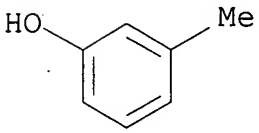
CM 1

CRN 119588-33-9
CMF C12 H22 O2 Si2



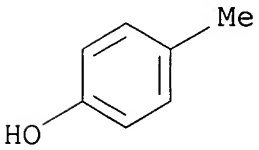
CM 2

CRN 108-39-4
CMF C7 H8 O



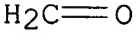
CM 3

CRN 106-44-5
CMF C7 H8 O



CM 4

CRN 50-00-0
CMF C H2 O

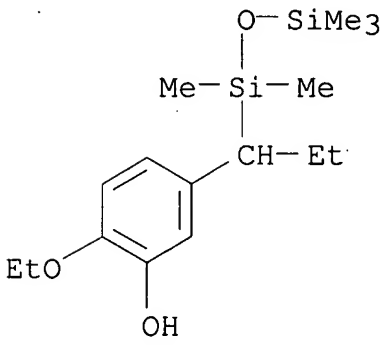


RN 119608-20-7 HCA
CN Formaldehyde, polymer with 2-ethoxy-5-[1-(pentamethyldisiloxanyl)propyl]phenol and 3-methylphenol (9CI) (CA

INDEX NAME)

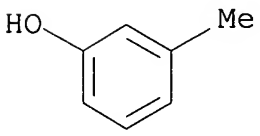
CM 1

CRN 119608-19-4
CMF C16 H30 O3 Si2



CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

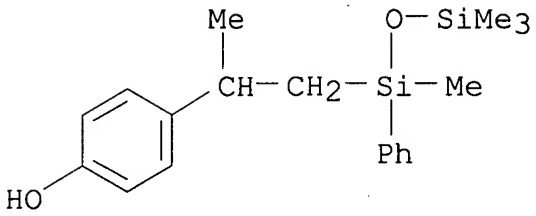
CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

RN 119608-22-9 HCA
CN Formaldehyde, polymer with 3-methylphenol and 4-[1-methyl-2-(1,3,3,3-tetramethyl-1-phenyldisiloxanyl)ethyl]phenol (9CI) (CA INDEX NAME)

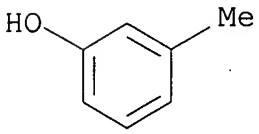
CM 1

CRN 119608-21-8
CMF C19 H28 O2 Si2



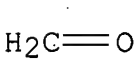
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

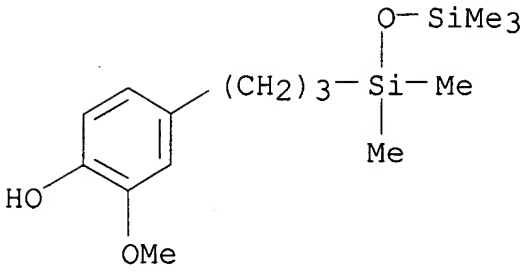
CRN 50-00-0
CMF C H2 O



RN 119608-23-0 HCA
CN Formaldehyde, polymer with 2-methoxy-4-[3-(pentamethyldisiloxanyl)propyl]phenol and 3-methylphenol (9CI) (CA INDEX NAME)

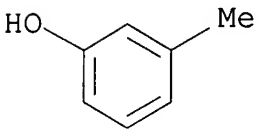
CM 1

CRN 4515-16-6
CMF C15 H28 O3 Si2



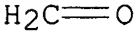
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

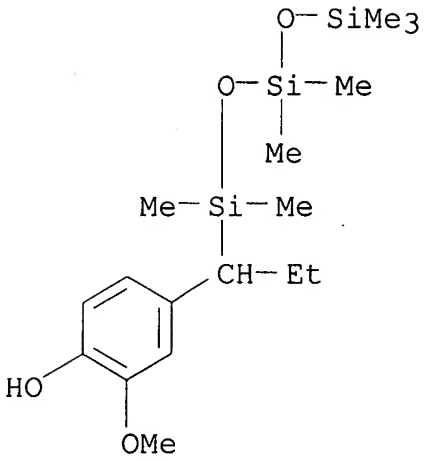
CRN 50-00-0
CMF C H2 O



RN 119608-25-2 HCA
CN Formaldehyde, polymer with 4-[1-(heptamethyltrisiloxanyl)propyl]-2-methoxyphenol, 3-methylphenol and 4-methylphenol (9CI) (CA INDEX NAME)

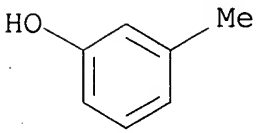
CM 1

CRN 119608-24-1
CMF C17 H34 O4 Si3



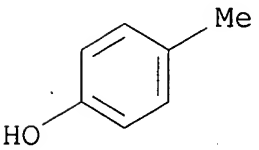
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

CRN 106-44-5
CMF C7 H8 O



CM 4

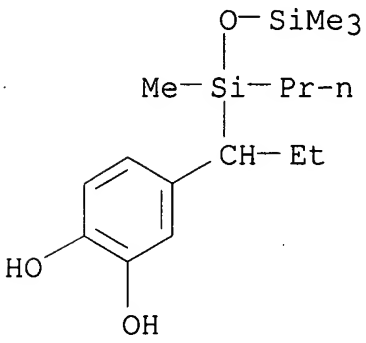
CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

RN 119608-27-4 HCA
CN Formaldehyde, polymer with 3-methylphenol and 4-[1-(1,3,3,3-tetramethyl-1-propyldisiloxanyl)propyl]-1,2-benzenediol (9CI) (CA INDEX NAME)

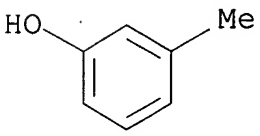
CM 1

CRN 119608-26-3
CMF C16 H30 O3 Si2



CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

CRN 50-00-0
CMF C H2 O

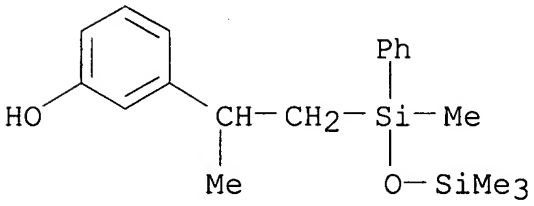
$H_2C{=}O$

RN 119608-29-6 HCA

CN Formaldehyde, polymer with 3-methylphenol and 3-[1-methyl-2-(1,3,3,3-tetramethyl-1-phenyldisiloxanyl)ethyl]phenol (9CI) (CA INDEX NAME)

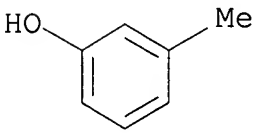
CM 1

CRN 119608-28-5
CMF C19 H28 O2 Si2



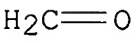
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

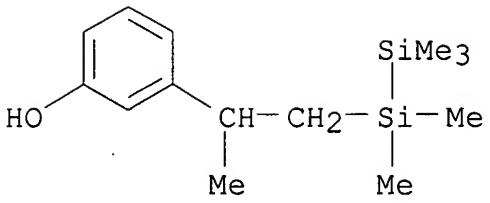
CRN 50-00-0
CMF C H2 O



RN 119608-31-0 HCA
CN Formaldehyde, polymer with 3-[1-methyl-2-(pentamethyldisilanyl)ethyl]phenol and 3-methylphenol (9CI) (CA INDEX NAME)

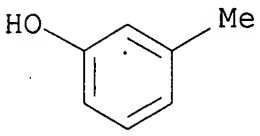
CM 1

CRN 119608-30-9
CMF C14 H26 O Si2



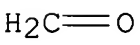
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

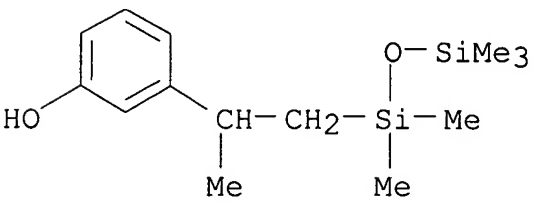
CRN 50-00-0
CMF C H2 O



RN 119608-32-1 HCA
CN Formaldehyde, polymer with 3-[1-methyl-2-(pentamethyldisiloxanyl)ethyl]phenol, 3-methylphenol and 4-methylphenol (9CI) (CA INDEX NAME)

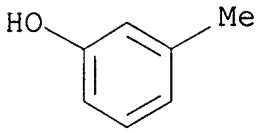
CM 1

CRN 119564-73-7
CMF C14 H26 O2 Si2



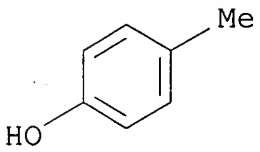
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

CRN 106-44-5
CMF C7 H8 O



CM 4

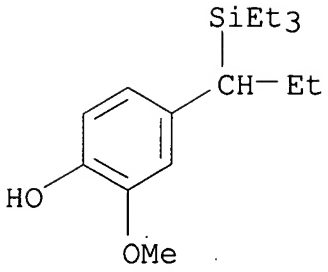
CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

RN 119608-33-2 HCA
CN Formaldehyde, polymer with 2-methoxy-4-[1-(triethylsilyl)propyl]phenol, 3-methylphenol and 4-methylphenol (9CI) (CA INDEX NAME)

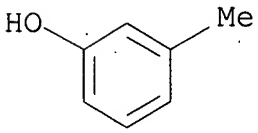
CM 1

CRN 119564-72-6
CMF C16 H28 O2 Si



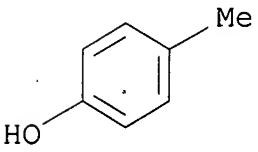
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

CRN 106-44-5
CMF C7 H8 O



CM 4

CRN 50-00-0
CMF C H2 O

IC ICM G03F007-00
ICS G03F007-08; G03C001-72
ICA C08L061-04; C09D003-54; C09D003-81; H01L021-312

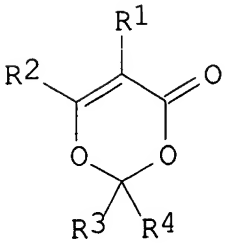
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **photolithog** silicon contg polymer photoresist
IT 119588-16-8 119588-17-9 **119588-19-1** 119588-20-4
119588-21-5 119588-23-7 **119588-25-9** **119588-27-1**
119588-29-3 **119588-30-6** **119588-31-7**
119588-32-8 **119588-34-0** 119588-35-1 **119608-20-7**
119608-22-9 **119608-23-0** **119608-25-2**
119608-27-4 **119608-29-6** **119608-31-0**
119608-32-1 **119608-33-2** 119608-34-3
119608-35-4 119608-37-6 119608-38-7 119608-40-1
(photoresist contg.)

=> D HIS L61-

FILE 'HCA' ENTERED AT 11:50:23 ON 22 NOV 2006
L61 12 S L54 NOT L60
L62 10 S L61 AND 1840-2003/PY,PRY

=> D L62 5,8 CBIB ABS HITSTR HITIND

L62 ANSWER 5 OF 10 HCA COPYRIGHT 2006 ACS on STN
115:18620 Photosensitive composition and pattern formation method using it. Onishi, Yasunobu; Niki, Hirokazu; Kobayashi, Yoshihito; Hayase, Rumiko; Ushirogouchi, Toru (Toshiba Corp., Japan). Eur. Pat. Appl. EP 396254 A2 **19901107**, 101 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1990-303556 19900403. PRIORITY: JP 1989-81453 19890403; JP 1989-146503 19890608; JP 1989-150444 19890615; JP 1989-150445 19890615.
GI



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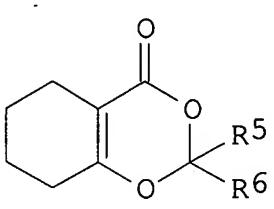

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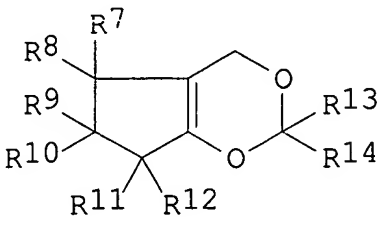


III

AB A photosensitive compn. is described contg. resin with a phenol skeleton and a compd. from I, II, or III [R1, R2 = H, alkyl; R3, R4 = R1, aryl, furyl, pyridyl, 2-styrene, together may form a cyclic structure; R5, R6 = R3, R4; R7-R12 = R1; R13, R14 = R3, R4]. The phenol-contg. polymer may contain Si. The compn. may contain a basic compd. A method of producing a pattern for semiconductor devices is also described. The compn. can produce fine patterns.

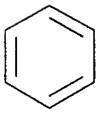
IT **9016-83-5 119588-34-0 134522-01-3**
(photosensitive compn. contg., for fine pattern formation)

RN 9016-83-5 HCA

CN Formaldehyde, polymer with methylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 1319-77-3
CMF C7 H8 O
CCI IDS



D1—OH

D1—Me

CM 2

CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

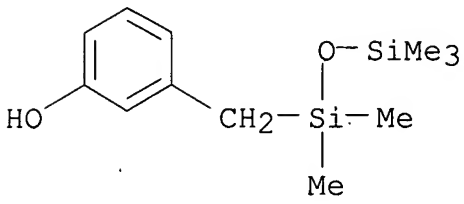
RN 119588-34-0 HCA

CN Formaldehyde, polymer with 3-methylphenol, 4-methylphenol and 3-[(pentamethyldisiloxanyl)methyl]phenol (9CI) (CA INDEX NAME)

CM 1

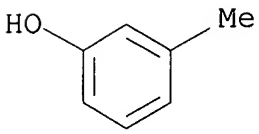
CRN 119588-33-9

CMF C12 H22 O2 Si2



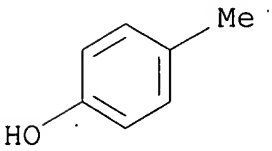
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

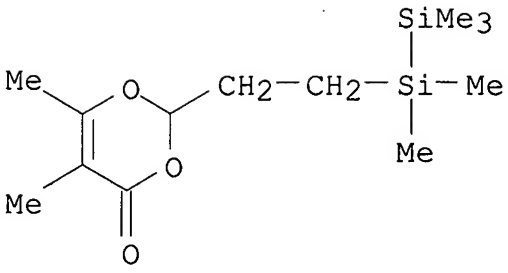
CRN 106-44-5
CMF C7 H8 O



CM 4

CRN 50-00-0
CMF C H2 O

RN 134522-01-3 HCA
CN 4H-1,3-Dioxin-4-one, 5,6-dimethyl-2-[2-(pentamethyldisilanyl)ethyl]-
(9CI) (CA INDEX NAME)



IC ICM G03F007-031
ICS G03F007-029
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST photosensitive compn patterning semiconductor; phenol resin silicon photosensitive compn; **resist** dioxinone compn photosensitive compn
IT Semiconductor devices
(fine-patterning **photoresist** compn. for, dioxinone compd. in)
IT **Resists**
(photo-, compn. contg. resin with phenolic skeleton and dioxinone compd. for)
IT 95-16-9, Benzothiazole 95-21-6 102-82-9 110-86-1, Pyridine, uses and miscellaneous 120-75-2 288-32-4, 1H-Imidazole, uses and miscellaneous 615-15-6 1678-43-9 2799-82-8 2799-83-9 **9016-83-5** 24979-70-2 28637-54-9 32935-31-2 32935-37-8 32961-64-1 32961-66-3 34435-87-5 35563-21-4 35563-23-6 66003-76-7 66003-78-9 84563-54-2 87769-39-9 **119588-34-0** 127746-76-3 127746-77-4 134521-92-9 134521-93-0 134521-94-1 134521-95-2 134521-96-3 134521-97-4 134521-98-5 134521-99-6 134522-00-2 **134522-01-3** 134522-02-4 134522-03-5 134522-04-6 134522-05-7 134522-06-8 134563-67-0
(photosensitive compn. contg., for fine pattern formation)

L62 ANSWER 8 OF 10 HCA COPYRIGHT 2006 ACS on STN
111:222152 Photosensitive composition containing azide compound for high-precision pattern. Horiguchi, Rumiko; Hayase, Shuzi; Onishi, Yasunobu; Ushirogouchi, Toru (Toshiba Corp., Japan). Ger. Offen. DE 3841571 A1 **19890629**, 36 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1988-3841571 19881209. PRIORITY: JP 1987-312657 19871210; JP 1987-312658 19871210; JP 1987-320414 19871218; JP 1988-68387 19880323.
AB A photosensitive compn. is described contg. an alkali-sol. resin, optionally a Si-contg. resin, and a compd. sensitive to 248 nm deep

UV radiation and having the formula R1COC(N2)COR2 [I; R1, R2 = C1-20 alkyl or alkoxy, aryl, aryloxy, anilino]. Optionally the photosensitive compds. are Si-contg. compds. of the formula R2R3R4 SiC(N2)R1 [R1-R4 = H, C1-10 alkyl, aryl, silyl]. The preferred compds. of the formula I are arom. compds. in which ≥1 benzene ring is substituted with ≥1 O2CC(N2)COMe group.

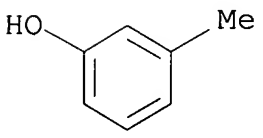
IT **27029-76-1 100346-90-5**, m-Cresol-p-cresol-formaldehyde-2,5-xylenol copolymer **104426-15-5 104426-16-6 112504-03-7**, m-Cresol-p-cresol-formaldehyde-3,5-xylenol copolymer **123737-05-3 123737-07-5**
(binder, for deep UV **photoresist**)

RN 27029-76-1 HCA

CN Formaldehyde, polymer with 3-methylphenol and 4-methylphenol (9CI) (CA INDEX NAME)

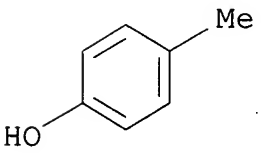
CM 1

CRN 108-39-4
CMF C7 H8 O



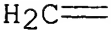
CM 2

CRN 106-44-5
CMF C7 H8 O



CM 3

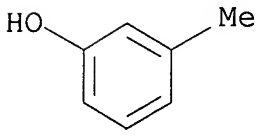
CRN 50-00-0
CMF C H2 O



RN 100346-90-5 HCA
CN Formaldehyde, polymer with 2,5-dimethylphenol, 3-methylphenol and 4-methylphenol (9CI) (CA INDEX NAME)

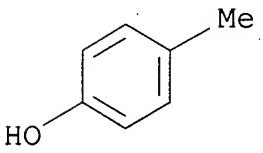
CM 1

CRN 108-39-4
CMF C7 H8 O



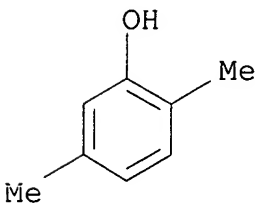
CM 2

CRN 106-44-5
CMF C7 H8 O



CM 3

CRN 95-87-4
CMF C8 H10 O



CM 4

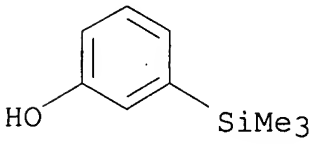
CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

RN 104426-15-5 HCA
CN Formaldehyde, polymer with 3-(trimethylsilyl)phenol (9CI) (CA INDEX NAME)

CM 1

CRN 17881-95-7
CMF C9 H14 O Si



CM 2

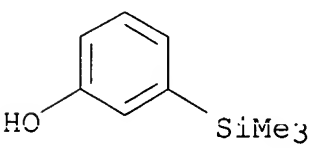
CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

RN 104426-16-6 HCA
CN Formaldehyde, polymer with 3-methylphenol and 3-(trimethylsilyl)phenol (9CI) (CA INDEX NAME)

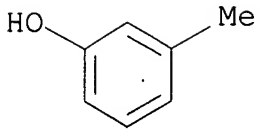
CM 1

CRN 17881-95-7
CMF C9 H14 O Si



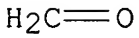
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

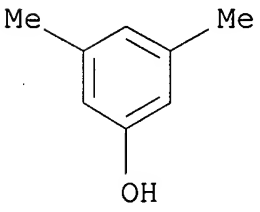
CRN 50-00-0
CMF C H2 O



RN 112504-03-7 HCA
CN Formaldehyde, polymer with 3,5-dimethylphenol, 3-methylphenol and 4-methylphenol (9CI) (CA INDEX NAME)

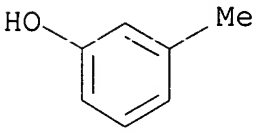
CM 1

CRN 108-68-9
CMF C8 H10 O



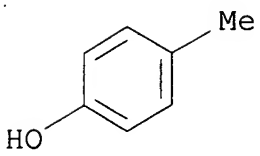
CM 2

CRN 108-39-4
CMF C7 H8 O



CM 3

CRN 106-44-5
CMF C7 H8 O



CM 4

CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

RN 123737-05-3 HCA
CN Formaldehyde, polymer with phenol and trimethyl(phenoxymethyl)silane (9CI) (CA INDEX NAME)

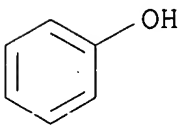
CM 1

CRN 75144-61-5
CMF C10 H16 O Si

$PhO{-}CH_2{-}SiMe_3$

CM 2

CRN 108-95-2
CMF C6 H6 O



CM 3

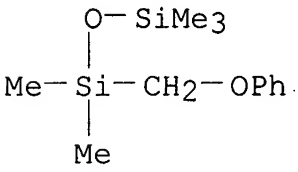
CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

RN 123737-07-5 HCA
CN Formaldehyde, polymer with pentamethyl(phenoxymethyl)disiloxane and phenol (9CI) (CA INDEX NAME)

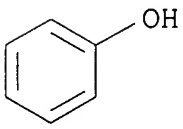
CM 1

CRN 123737-06-4
CMF C12 H22 O2 Si2



CM 2

CRN 108-95-2
CMF C6 H6 O

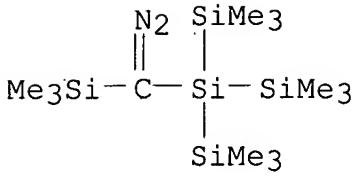


CM 3

CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

IT **86997-48-0**
(photosensitive compd., for deep UV **photoresist**)
RN 86997-48-0 HCA
CN Trisilane, 2-[diazo(trimethylsilyl)methyl]-1,1,1,3,3,3-hexamethyl-2-(trimethylsilyl)- (9CI) (CA INDEX NAME)



IC ICM G03F007-10
ICS G03F007-08; C08L025-18; C08L061-04
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST photosensitive compn **photoresist** pattern; azide silane photosensitive compd; binder photosensitive compd; phenolic resin photosensitive compd
IT Phenolic resins, uses and miscellaneous
(binders, for deep UV **photoresist**)
IT Binding materials
Azides
(for deep UV **photoresist**)
IT **Resists**
(photo-, deep UV, azides for)
IT 25086-15-1, Methacrylic acid-methyl methacrylate copolymer **27029-76-1** 59269-51-1, Polyvinylphenol 72317-19-2 85229-30-7, Acrylonitrile-isopropenylphenol copolymer **100346-90-5**, m-Cresol-p-cresol-formaldehyde-2,5-xylenol copolymer 102868-49-5 **104426-15-5 104426-16-6** 111634-04-9 **112504-03-7**, m-Cresol-p-cresol-formaldehyde-3,5-xylenol copolymer 123710-88-3 123737-03-1 123737-04-2 **123737-05-3 123737-07-5** 123737-09-7
(binder, for deep UV **photoresist**)
IT 2009-96-3 2085-31-6 22760-66-3 24379-49-5 28383-65-5 41657-71-0 75742-13-1 **86997-48-0** 123131-57-7 123766-64-3 123766-65-4 123766-66-5 123766-67-6 123766-68-7 123766-69-8 123766-70-1 123766-71-2 123766-72-3 123766-73-4 123766-74-5 123766-75-6 123766-76-7 123766-77-8 123766-78-9 123766-79-0 123783-62-0 123783-63-1
(photosensitive compd., for deep UV **photoresist**)